Claims

[c1]	A device comprising: a substrate with a device region; a cap for encapsulating the device, the cap creates a cavity over the device region; and spacer particles on the substrate to support the cap, the spacer particles comprising a base and an upper portion, the base being at least equal to or wider than the upper portion.
[c2]	The device of claim 1 wherein the device region comprises one or more cells.
[c3]	The device of claim 2 wherein the cells comprise at least one organic layer formed between lower and upper electrodes.
[c4]	The device of claim 3 wherein the lower electrodes are anodes and the upper electrodes are cathodes.
[c5]	The device of claim 3 wherein the upper electrodes are anodes and the lower electrodes are cathodes.
[c6]	The device of claim 3 wherein the spacer particles comprise a half-spherical shape.
[c7]	The device of claim 3 wherein the spacer particles comprise a pyramidal, cubical, prism, regular or irregular shape.
[c8]	The device of claim 3 wherein the spacer particles comprise a non-conductive material.
[c9]	The device of claim 8 wherein the spacer particles comprise glass, silica, polymers, ceramic or photoresist.
[c10]	The device of claim 8 wherein the spacer particles comprise an average diameter to maintain the height of the cavity.
[c11]	The device of claim 10 wherein the spacer particles comprise a density to maintain separation between the cap and the device region.

	[c12]	The device of claim 11 wherein the density is about 10 1000 No/mm 2 .
	[c13]	The device of claim 12 wherein an average distance between the spacer particles is about 100 500 μ m.
•	[c14]	The device of claim 1 wherein the spacer particles comprise a half-spherical shape.
	[c15]	The device of claim 1 wherein the spacer particles comprise a pyramidal, cubical, prism, regular or irregular shape.
	[c16]	The device of claim 14 wherein the spacer particles comprise a non-conductive material.
	[c17]	The device of claim 16 wherein the spacer particles comprise glass, silica, polymers, ceramic or photoresist.
	[c18]	The device of claim 17 wherein the spacer particles comprise an average diameter to maintain the height of the cavity.
	[c19]	The device of claim 18 wherein the spacer particles comprise a density to maintain separation between the cap and the device region.
	[c20]	The device of claim 19 wherein the density is about 10 1000 No/mm 2 .
	[c21]	The device of claim 20 wherein an average distance between the spacer particles is about 100 500 μ m.
	[c22]	A method for forming a device, comprising: providing a substrate with a device region; applying a layer of adhesive on spacer particles, the spacer particles comprising
		a base and an upper portion, the base being at least equal to or wider than the upper portion;
	·	depositing the spacer particles on the substrate;
		curing the layer of adhesive on the spacer particles; and mounting a cap on the substrate to encapsulate the device, the cap forms a
		cavity over the device region, the cavity maintained by the spacer particles.

[c23]	The method of claim 22 wherein the device comprises an OLED device.
[c24]	The method of claim 23 wherein the spacer particles comprise a non-conductive material.
[c25]	The method of claim 24 wherein the step of depositing the spacer particles comprises dry spraying.
[c26]	The method of claim 25 wherein the spacer particles occupy active and non-active parts.
[c27]	The method of claim 25 wherein the spacer particles occupy non-active parts.
[c28]	The method of claim 25 wherein coverage of the spacer particles on the substrate is patterned by photolithography technology.
[c29]	The method of claim 25 wherein coverage of the spacer particles on the substrate is patterned by shadow mask technology.
[c30]	The method of claim 25 wherein coverage of the spacer particles on the substrate is patterned by dry resist technology.
[c31]	The method of claim 24 wherein the step of depositing the spacer particles comprises wet spraying.
[c32]	.The method of claim 31 wherein the spacer particles occupy active and non-active parts.
[c33]	The method of claim 31 wherein the spacer particles occupy non-active parts
[c34]	The method of claim 31 wherein coverage of the spacer particles on the substrate is patterned by photolithography technology.
[c35]	The method of claim 31 wherein coverage of the spacer particles on the substrate is patterned by shadow mask technology.
[c36]	The method of claim 24 wherein the step of depositing the spacer particles comprises spin coating, doctor blading, screen printing or transfer printing.
[c37]	The method of claim 24 wherein the adhesive comprises thermal curable

material.

- [c38] The method of claim 24 wherein the adhesive comprises ultraviolet curable material.
- [c39] The method of claim 24 wherein the adhesive comprises hot melt material.
- [c40] A method for forming a device, comprising:

 providing a substrate with a device region;

 forming a plurality of spacer particles on the substrate, the spacer particles

 comprising a base and an upper portion, the base being at least equal to or

 wider than the upper portion; and

 mounting a cap on the substrate to encapsulate the device, the cap forms a

 cavity over the device region, the cavity maintained by the spacer particles.
 - [c41] The method of claim 40 wherein the step of forming a plurality of spacer particles on the substrate comprises:

 depositing particles on the substrate; and heating the particles to a high temperature to cause the particles to reflow into the spacer particles having the base at least equal to or wider than the upper portion.
 - [c42] The method of claim 40 wherein the step of forming a plurality of spacer particles on the substrate comprises:

 depositing a photoresist on the substrate; and patterning the photoresist into the spacer particles having the base at least equal to or wider than the upper portion.